ELECTRICITY ON THE FARM *Magazine*

JUNE-JULY, 1953

Pampered Eggs are White Gold
Electric Cooking's Cooler . . . .
Pump Nutrients into Silage . .
Fill Freezer Frequently . . . . . .
Sheller for Limas—Peas, Too

— 26th Year —

PERIODICAL

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ELEVATORS FILL THE SILO

See Page 6

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Mrs. W. C. Boyle and her crop drier which permits earlier picking to prevent field loss and allows earlier fall plowing.

The crop drying building on Mrs. Boyle's farm. Notice the ventilating louver, sliding doors, and easy-to-fill hatches.

Mrs. W. C. Boyle of Grinnell, Iowa purchased an ear corn and small grain drying building in 1952. Says Mrs. Boyle, "We could have built an ordinary corn crib, but we wanted a storage unit that would handle wet corn and dry it out. In the past, we sometimes had more wet corn on hand than could be consumed by the cattle. We also like this building because of its flexibility—it can be used for many other purposes when not used for storing corn or grain. Also, this building is safe from rats and fire." Mrs. Boyle no longer has to worry about crop spoilage losses.

Mrs. Boyle's building is equipped with a drying tunnel and a semi-pressure fan powered with a dependable G-E 3 hp motor.

For more information, check "Crop Drying and Storing" on coupon.

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It keeps bacteria count down and is sturdy and compact

Mr. Grisham and his milk cooler. Sturdy and easy to keep clean, the unit is thoroughly insulated with Fiberglas. Cans are only 11 inches from floor.

Mr. Luther L. Grisham, farmer of Elk Creek, Missouri uses a G-E powered front-open milk cooler to maintain his milk quality and to save himself work while doing it. He says, "This front-open milk cooler is the best and most convenient I've ever owned."

Milk cans may be easily slid in and out of cooler. Milk is cooled to 50°F. in less than an hour. Unit builds up and maintains a large ice bank for emergencies.

Available in 4, 6, 8, and 12 can capacities, cooler may be easily adapted to pipe line milking. For more information check "Milk Cooler" on coupon.

DEEP WELL PUMP IS THE HEART OF WATER SYSTEM

Provides plenty of water for modern, comfortable farm living

When William and Alberta Moffit Jr., of RR 1, Le Claire, Iowa built their new farm home, they had a water system installed to meet all their household needs. Says Mr. Moffit, "There's no substitute for a good water system. A dependable water supply is a must for the convenience of a modern kitchen, bathroom, and laundry. It's a big help when you have six children, too."

The completely automatic water system delivers 1700 gallons of water per hour. The pump requires no attention and will give years of dependable service.

The pump is powered with a dependable G-E motor. For more information on pumps and water systems check "Water Systems".

Harold "Red" Olson, well driller, shows Mr. and Mrs. Moffit the features of their pump located conveniently in basement.

General Electric Company
Section 671-288, Schenectady 5, N. Y.
I would like additional information on the following:

- ☐ Crop Drying and Storing
- ☐ Milk Cooler ☐ Water Systems
- ☐ How to Choose Your Motor

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Editor's Chat

POWER PLANNING

More of you every day are installing labor saving electrical equipment that includes large motors, heating equipment, or a combination of equipment that adds up to a lot of kilowatts. This equipment includes hay and grain drying systems, barn cleaners, silo unloaders, graders, etc. Those of you who have already installed such equipment have found that a thorough examination of the old wiring system was necessary and in most cases some revisions had to be made. You probably had to change your main entrance switch to a larger one and also install more circuits and larger wiring. In the home too, equipment that requires special circuits due to their rated voltage and wattage is becoming more prevalent. Such equipment is the dryer, water heater, range and air conditioning units.

Your power supplier's "wiring system," while it is more complex than yours, has to be constantly redesigned to adequately take care of the equipment that you add. More generating plants, more and bigger transmission lines, more substations and heavier distribution systems are continually being built. That's progress!

Wherever there is progress it always helps to have a certain amount of coordination. So if you are planning to install any of the equipment mentioned here, or similar equipment, it would be advantageous to you and your power supplier if you would give him as much advance notice as possible. Then, if your service or the transformer nearest you has to be changed, he will have sufficient time in which to make the change.

BE CAREFUL—IT'S LOADED

Three out of four of you are risking your lives, your families, and your property by permitting unnecessary fire hazards to exist. That's what the National Safety Council says. Sixty percent of your fire loss is attributed to farm homes, and barns account for thirty percent.

Even more alarming is the accident toll on farms. Of 1,927 farm accidents studied by the Bureau of Agricultural Economics, 476 resulted from falls. Machines accounted for 248, animals 233, motor vehicles 179, and so on down the line.

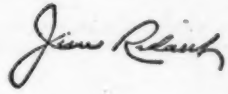
Unfortunately, these deaths, disabilities, suffering, and losses from accidents, and fires could have been avoided. Remedies are usually simple, inexpensive and obvious. The principal requirement is individual determination to recognize the hazards and work out ways to correct the conditions or practices that are the causes.

Make *your* farm safe.

A ROSE BY ANY OTHER NAME

A few days ago, we received, in the mail, a recipe from the National Dairy Council for making chocolate eggnog. With three growing boys at home I decided that I would try it out on them. What a response! Everyone in the family liked it. And as a result two extra quarts of milk were consumed as well as four extra eggs in one day. What amused me was that they had been drinking the same mixture for years. The difference was, I had brought home a new name for it, "Chocolate Eggnog." Here's what it contained: 1 quart of milk; ½ cup chocolate syrup; 2 eggs separated; ½ teaspoon vanilla extract, and a few grains of salt. There was one innovation—we hadn't been adding the salt.

How much more of your milk and how many more of your eggs do you think could be sold if every family knew about "chocolate eggnog?" Could farm products use more publicity?



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NEW Roll-Out Dairy Shelf. Puts once-hard-to-get-at foods at your fingertips. No more reaching.

NEW Built-In Butter Chest. Indoor. Keeps a full pound of butter. Handy butter tray for table use.

NEW "Moisture-Seal" Crispers. Keep fruits and vegetables from your garden fresh for days longer.

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†24 top winners will be awarded $1,000 each for their vacations.

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Pampered Eggs are White Gold

Extra Care Provides Extra Profits

By WILLIAM R. KOLLMAYR

Egg Lot Number 158 has been on the Flemington Auction market for twenty-five years. During that time, it has meant white gold for the owners of the Treiber Poultry Farm, located on the heights of the Delaware River at Frenchtown, N. J. The reason is obvious: Lot No. 158 is packed uniformly, cleaned just a little better, and candled to eliminate cracks and spots. Through better feeding and handling methods the Treibers produce an egg with uniform interior condition and color.

The gold has accumulated because buyers are willing to pay a premium of from one-quarter to one and a half cents a dozen for these white eggs. With 6,000 high producing layers—Treiber Leghorns average 60% production a year, and 30 cases of large eggs to 1 of medium—the price premium becomes important. It has made it easier for Mrs. Treiber to obtain her modern electric kitchen.

1. Plenty of nests, with a clean commercial sugar cane litter in them is provided in the laying house.
2. Eggs are gathered twice a day in wire baskets.
3. These baskets are placed in a special concrete-floor egg room at 55° temperature until following morning.
4. Every evening the concrete floor is hosed with water.
5. Eggs are candled as they feed into a 6-row dry electric egg cleaner.
6. From cleaner they automatically proceed to electric grader.
7. Packaging is in "one-use" clean, new style fiber case.
8. Eggs are sent to market twice a week—Monday and Thursday.
9. They are carefully "handled" at all times.
10. Bidding at auction for Lot 158 is brisk and high.

Equal success is enjoyed by the Treibers in selling their "home-produced" baby chicks and eggs for embryo virus production. Leghorn eggs are truly "White Gold" for the Treibers.

Above: All eggs are dry cleaned with an automatic abrasive cleaner. This in turn, self feeds into the 3800 egg per hour grader.

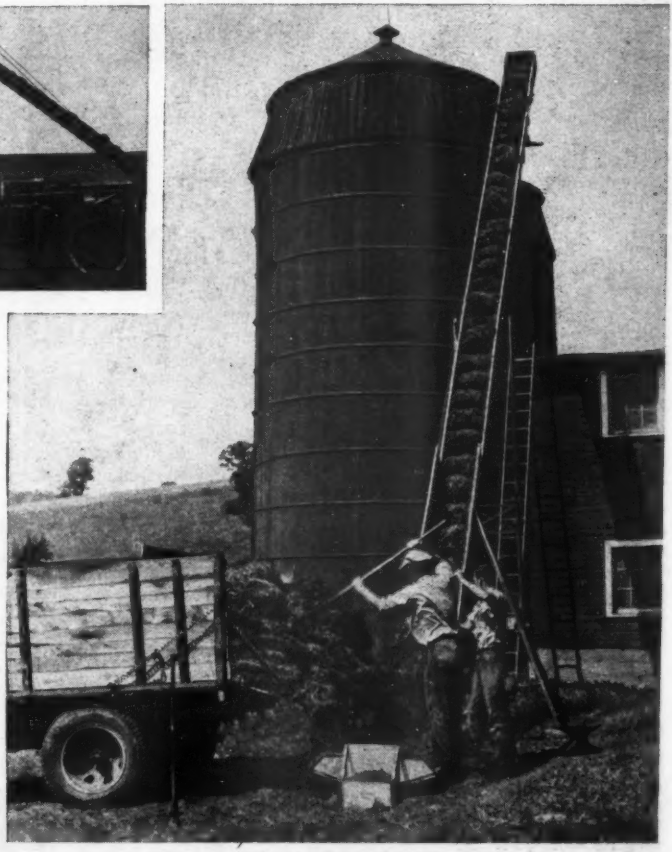
Right: The eggs, gathered twice a day, are stored in a special insulated room. Both Max and Blanche Treiber enjoy handling the white gold.

Elevators Fill the Silo

at Rates Up to 35 Tons Per Hour

By L. L. BOYD and C. N. TURNER

Could you use another tractor at silo filling time? Many of you could, but you don't need to buy one. There's a more economical and satisfactory way. Why not use a silage elevator that will have as much or more elevating capacity than the blower you now use? And only a 3 to 5 horsepower electric motor will operate it. This will free a tractor for hauling, and you will be able to do your filling more rapidly. The elevator will handle the full capacity of your field chopper, while often a blower will not. And an elevator will never plug.



Above: One type of commercial elevator being used to fill a silo. Note the long length required due to the low angle of incline. **Right:** No plugging here! It will handle the crop just as fast as you can load it. This silo elevator is in use on a farm in Tioga County, New York.

Why the change back to elevators when not too many years ago we decided that they should be replaced by blowers? The change in forage harvesting and handling methods, namely the field chopper and the mechanical unloading wagon, seems to be the answer.

The first elevators to be used for silo filling were of low capacity. With the methods of cutting and transporting in use at that time, they were adequate. But they were bulky to assemble and move, and in addition they did not last very long because they were made of wood. The blower had much to offer with its short sections of pipe and its trailer wheels. This made it very easy to assemble and move from silo to silo.

Chopping and elevation were combined into one operation. The blower gave the added capacity needed by large crews of men with teams and wagons, who hauled the forage crop to the silo to be chopped. Today with the field chopper, the size of the crew of men has been cut to as low as two men with greater output than ever before. The mechanical unloading wagon moves the forage from the wagon faster than many blowers can handle it. With mechanical unloading the blower can not elevate the silage as fast as the field chopper can cut it. Much of the plugging of blowers results from trying to keep up with the field chopper.

Today's elevators operate at relatively high speeds and so are able to move large quantities in a short time. One commercial

Here is the Cornell experimental elevator, fully extended over a silo. Note the steepness of the incline which tests have proved practical.

elevator is rated at 35 tons per hour with a 5 horsepower electric motor. You might expect a 3 horsepower motor to move about 25 tons per hour.

Rigid construction of both steel and aluminum gives the elevator a long service life. Trailer mounted, with raising mechanisms, they are easily maneuverable. The chain drag which feeds the elevator is an important safety feature. Several men have lost feet, legs, hands or arms in the augers used to feed many of the blowers. In addition, elevators have several other potential uses such as elevating corn, small grains and baled or chopped hay and straw. They are even being used with, or as part of, mechanical feeders for livestock.

Elevators cost more than blowers, but receive more hours of use. One manufacturer makes a 74 foot elevator that sells for about $1000. Most of the good blowers sell for around $700. However, the elevator operates with a less expensive power unit with a lower cost per hour.

Elevators still present a problem for filling very high silos. Due to the low angle of incline of most elevators, long lengths are necessary. This makes them somewhat bulky and unwieldy to handle, although not heavy or particularly difficult to move. At least 15 manufacturers make elevators that will fill silos 30 to 35 feet in height, while only 2 or 3 make an elevator that will fill a 50 foot silo.

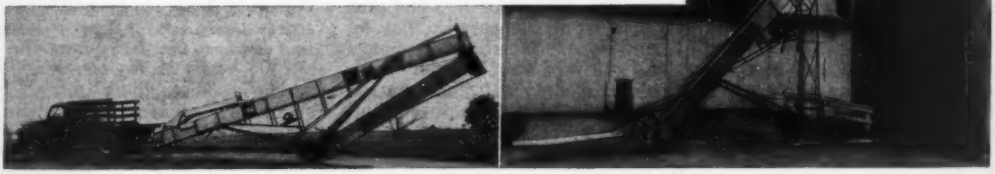
An experimental elevator, built and tested at Cornell University in 1950, indicated that steeper angles of elevation were not only possible, but also practical and desirable. Another feature of the Cornell experimental elevator was a telescoping arrangement to make a compact unit for transporting from silo to silo. This elevator has been used the past two years by the Rice Brothers near Tunkhannock, Pennsylvania. They have used it with both grass and corn silage and are well satisfied. Many of their neighbors, who also used it or saw it operate, are now buying elevators for filling their own silos.

Vertical elevators are being experimented with and may prove practical. However, they are not readily moved as is the inclined elevator. Neither will they handle all the varied products that can be elevated with the inclined elevator.

Manufacturers are beginning to build elevators that will operate at steeper angles. Undoubtedly telescoping elevators will also make their appearance in the near future. Certainly the newer elevators will be more rugged, yet lighter and more maneuverable.

Cover Picture

Filling silo with grass on the J. E. Trumbauer farm at Lansdale, Pa. A 1½ hp motor provides ample power for this 30 foot silo. Filling was as fast as with a tractor driven blower.



Two views of a commercial silo filling elevator. For transport, a section of it folds under. Fully extended, it will elevate silage to a height of 47 feet.

At the receiving table, the eggs are brushed off the conveyor belt by rubber flaps which are suspended over the belt.

Hen Fruit Conveyor

It Gathers Eggs Automatically

By F. LELAND ELAM

Economy is a key word with most ranchers and Otis Moss, Denair, California poultryman, has made the most of the word by putting an old milk separator mechanism to work as the means of operating his automatic egg gathering unit.

The milk separator, he found, traveled at just the right speed for sending an egg gathering belt along through the large community nest in his poultry house. A 1 HP electric motor is mounted on top of the separator. It is hooked up by belt to the separator mechanism. This, in turn, drives the shaft of the egg conveyor belt pulley through a second vee belt. As the shaft turns, a continuous 2¼" webbing belt passes along under the nests, over a wheel at the far end of the laying house and returns. It picks up the eggs that roll from the slanted bottom of the nest and brings them back to the egg collecting table.

To facilitate the movement of the eggs from the belt, as it moves across the 8'x4' egg gathering table, a 2"x2" board is mounted 3" above the table directly over the course of the belt. Fastened to this board, on the five feet nearest the power unit, are pieces of automobile tire inner-tubes. These are spaced eight inches apart and drag lightly on the belt.

In the laying room the community nest, from which the belt gathers the eggs, is continuous along one side of the room. This nest is 12" high and 12" wide with openings in the front to allow birds to enter. The nest floor is of heavy wire netting and slopes to the front. The eggs roll forward onto the belt which slides along in an enclosure, at the front edge of the nest floor.

When it is egg gathering time, the power unit starts automatically or it can be started manually. The belt, carrying the eggs, passes through an opening in the end wall of the laying house and into the egg processing room. Here the rubber flaps on the overhead board push them off onto the receiving table.

A clock is used as an automatic start and stop device to make possible the operation of the belt at set intervals even though an operator is not present. The clock sets on the platform with the motor.

Fresh Feed at All Times

By O. J. TRENARY

It is the general feeling among farmers and ranchers that a large mill is necessary if feed is to be ground for their dairy cows or in feeding cattle. Such a layout calls for more of an investment than necessary and requires more labor than if a small electric motor and mill are used.

On the John Shuman farm near Deer Trail, Colorado, a demonstration was set up to show how a one H.P. electric motor and hammer mill could do the job. Mr. Shuman had

This is the small, 1 hp mill which replaced a large tractor driven hammermill on the Shuman farm. Grain flows directly from overhead bin. Ground feed drops into storage bin below. The mill will handle ½ ton per hour.

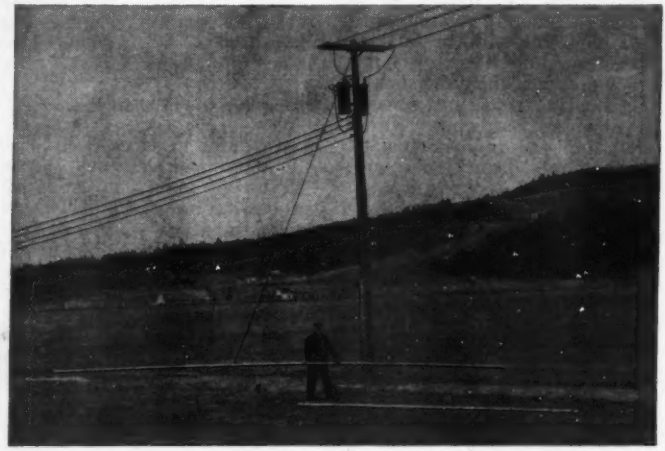
been using a large hammer mill driven by his tractor. He had always felt the larger mill was necessary to grind the grain he needed.

John Shuman built an overhead bin, as shown in the pictures, with a hopper below the mill to hold the ground feed. The hopper is built next to his feed supply and next to where he carries on his feeding operations for his dairy cows, calves and cattle.

When feed is needed, the switch is snapped and the slide controlling the grain entering the mill from the overhead bin is adjusted. John then proceeds to do the balance of his chores, returning when he feels there has been enough ground. It only takes a few trials to find out how long it takes to grind a given amount of feed. "I have fresh feed to feed my stock at all times," says Mr. Shuman.

He has not had any trouble in bridging, and this type of setup provides a method of grinding grain with the minimum amount of labor. The small mill will grind up to 1,000 pounds of corn or wheat, or 600 pounds of oats per hour.

The cost of grinding is about one cent per one hundred pounds of feed.



Safety and Irrigation

By R. HAROLD ANDERSON

Possibly there's no equipment on the farm that looks less likely to cause injury to the farmer than light, sturdy aluminum pipe used in sprinkler irrigation. Yet safety supervisors with the nation's safety-minded power suppliers are getting furrows in their brows searching for a way to prevent an unusual but all too possible hazard in the handling of aluminum pipe.

Aluminum pipe is one of the best conductors of electricity. In fact, aluminum wire is being widely used for carrying transmission current. Should a farmer handling long lengths of aluminum sprinkler pipe on the ground chance to contact overhead power lines, the charge of electricity from the wires will be passed down the pipe into the person handling it.

Thus far, this type of accident has been rare but the possibility of occurrence can give the safety men nightmares. Aluminum pipe, because of its lightness, is commonly handled in the field. In recent years, the pipe has been manufactured in longer lengths, some up to 60 feet. This means that if the pipe were stood on end, it would have no chance of clearing power lines that are often put at 40 and 45 foot heights.

An unusual accident of this kind noted in the public press recently concerned a farmer's dog that chased a cat into an aluminum pipe. The farmer turned the pipe on end to dislodge the animals, and the pipe contacted an overhead line. The result was fatalities to the farmer, the dog and the cat.

How can these accidents be prevented? Only through alertness by the farmer to the situation. Aluminum pipe should, at all times, be handled on a horizontal plane. Don't stand it up on end. If farmers will establish this as a habit, they'll have no worries about a sudden electrical jolt. And aluminum irrigation pipe is not the only potential culprit. Be careful when handling metal ladders near power lines. Or, if you have occasion to pull well casings or use hay booms or large pieces of equipment, always make sure of plenty of overhead clearance.

Above: Danger! Don't stand it on end. Accidental contact with overhead wires could be fatal.
Left: Keep it level! Make it a rule to handle long pieces in a horizontal plane.

Happy Thought

A magazine published in Europe, has reported a generator built into the clutch housing of a tractor in place of the flywheel. The power-take-off shaft is electrically driven and is independent of the transmission gears of the tractor. Besides the electric driven p. t. o. this opens up the possibility of using electric motors on tractor drawn farm equipment. Think of all the belting that could be eliminated on a combine.

Sheller for Limas—Peas, Too!

30 Seconds for Peas—3 Minutes for Limas

By JOHN STRAIT

The shellers described in this article were developed by the Department of Agricultural Engineering, University of Minnesota, and are adaptable to the shelling of most all varieties of green garden peas and green lima beans. The shellers are designed as batch shellers and are intended to handle pods after they have been removed from the vines. About five or six pounds of pods may be placed in the sheller per batch.

These shellers consist essentially of a rotating drum which is turned by hand at a speed of about 50 to 60 revolutions per minute and which is covered with a material having openings of such size that the shelled beans or peas may escape from the drum while the pods are retained. The shelling action is accomplished by the use of paddles assembled on a rotating member driven at a speed of 375 to 450 rpm. The lowest effective paddle speed should be used to prevent excessive bruising and pod breakage. A ¼ HP electric motor may be used to drive the paddles as shown in figure 1.

The sheller shown in figure 2 is equipped for shelling green peas. The drum is covered with 2x2 mesh hardware cloth which will permit the shelled peas to escape from the drum but will retain most all of the pods.

In the operation of the sheller, peas are placed in the drum, the drum is turned by hand and the motor started to operate the paddles. The crank which turns the drum is rotated at about 60 revolutions per minute in the same direction of rotation as the paddles. The paddles break the pods open by hitting them as they drop and therefore shell the peas. The peas are screened through the hardware cloth and fall into the tray immediately below the drum. It requires only 30 to 45 seconds of operation to completely shell a batch of peas. A longer shelling time merely results in more of the pods being broken into small pieces, and these pieces fall into the tray and increase the difficulty of cleaning the peas.

When shelling is complete, the tray will contain the shelled peas mixed with small pieces of pod. There is a hole in one corner of the tray bottom which is useful in separating the peas from the pieces of pod. The entire contents of the tray should be shifted to the end of the tray opposite the hole, then the operator should tilt the tray and shake it slightly. The peas will roll out and the pod pieces will tend to remain. It may be necessary to repeat this process two or three times as the pieces of pod work down toward the hole. A little care in emptying the tray will result in very little hand work being required to clean the peas prior to freezing. A separating device has been designed to clean the peas as they are shelled but it is a rather complicated piece of equipment.

For Green Lima Beans

In order to successfully shell lima beans, which vary in size so much among different varieties, an adjustable drum covering made of wood has been devised. In this arrangement there is an inner drum and an outer drum both of which are covered with slats having ½x1-inch openings. The slats are nailed on the two drums in such a way that the openings are in alignment.

The sheller's outer drum may be shifted on the shaft with respect to the inner drum, thereby varying the size of the openings from about ½x¾ inch to ½x1 inch. It is desirable that the size of the openings be made of proper dimension to retain the

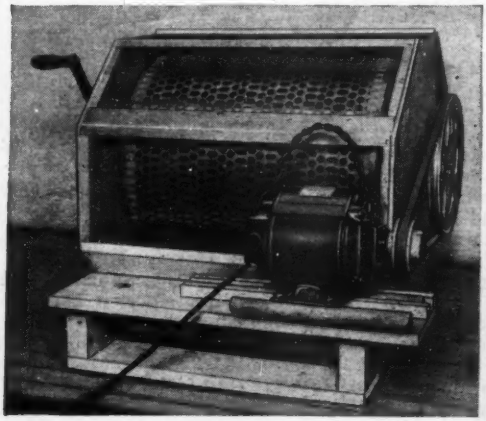


Figure 1. A portable motor is used to drive the paddles of the sheller. The drum is turned by hand.

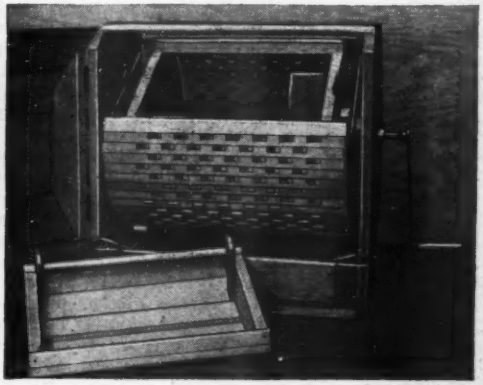


Figure 3. A double drum is used for lima beans. By shifting the inner one, along its axle, the size of the openings, through which the beans drop, is altered.

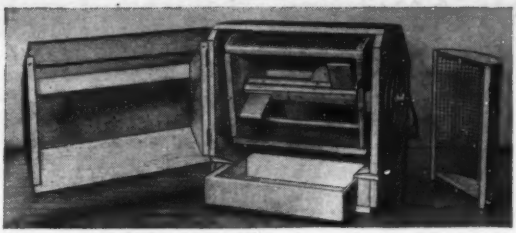


Figure 2. For peas, hardware cloth is used for the drum. Peas drop into the drawer, shown partly open, at bottom.

pods but permit the shelled beans to escape to the tray below. Figure 3 shows a machine equipped with an adjustable drum for shelling lima beans. Lima beans are more difficult to shell than peas and require an operation time of about three to four minutes to completely remove the beans from the pods. An adjustable pulley should be used on the motor so that the paddle speed may be decreased for the large lima beans in order to prevent breakage.

The pieces of pod are more difficult to separate from the lima beans than in the case of peas. Sieving the material over sieves having openings as large as possible and still retain the beans will get rid of a lot of trash. Some can be separated out by flotation and washing in water and that which remains must be picked out by hand.

For plans of the pea sheller write to the Bulletin Department, University Farm, St. Paul 1, Minnesota.

Plans for the lima bean sheller and for the separating mechanism for peas may be obtained from the Department of Agricultural Engineering, University Farm, St. Paul 1, Minnesota. The price for each plan is 25 cents.

Helper With 120 Feet

By F. L. RIMBACH

Edward Kuzinski of Town Line Dairy Farm in Upton, Massachusetts, has found himself a 120 foot helper. Last year, it saved him two weeks of the hardest labor on the farm—that of carrying and piling some 5,000 bales of hay in his barn.

The helper is a conveyor which carries the hay the full length of his 120′ barn. It's raised and lowered by ropes and pulleys and the work is done by a 1 hp electric motor. The hay is taken off, by one man, and stacked each side of the conveyor which goes down the middle of the barn.

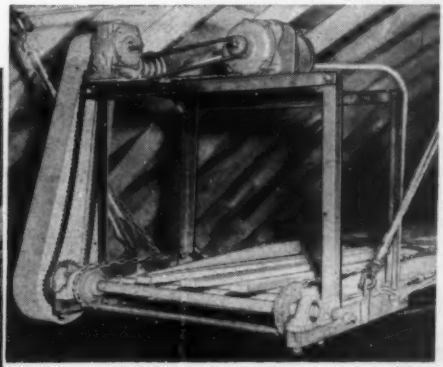
Built by a local carpenter, the conveyor cost about $800. However, Mr. Kuzinski figured that the time and labor alone saved approximately $500 last year. He estimates that he mows his hay for about 2c per bale with the conveyor.

In stacking the hay, one man is able to do the work of four. He can take bales from the conveyor and place them in position as fast as another man can feed the elevator which lifts the bales from the truck to the conveyor. The elevator raises the bales about 20 feet. The biggest problem, solved by the conveyor, was storing hay in the farthest end of the barn and stacking it high enough.

The somewhat flexible runs, that the hay travels on, are constructed of 1″ x 6″ spruce, joined together in one complete unit. The bales are moved by steel bars, supported between two chains, the speed of which can be changed to suit the need. The chains are low priced standard units, as are the other parts.

The conveyor's supporting blocks and tackles are spaced 20′ apart along its entire length.

In the interest of safety, the conveyor can be stopped anywhere on the line. However, it can only be started at the power end.



Above: Power for the conveyor is supplied, through a gear box, by a 1 hp motor. The speed can be varied to match the distance the bales must travel. **Left:** At 20 foot intervals, the conveyor is supported by ropes and pulleys. It can be raised as the mow is filled, so that it's always at a convenient height to work from.

Field to Mow in Minutes

Ohio Farmer Timed Himself to Prove It

By CHARLES HOOTMAN

Talk about efficient haymaking methods! Arthur Merritt of Wayne, Ohio, can show you low-cost high-quality hay he made using a buck rake, a mow hay drier, and a homemade man-lift. And it's a one-man haymaking operation, too.

Here are some of the advantages Mr. Merritt has found in his solution to the haymaking problem on his livestock farm.

1. The time the hay is in the field is only one-half as long, thus reducing the weather risk.
2. This method is fast and efficient; 1¼ tons of hay per man hour.
3. The investment in haymaking equipment is comparatively low.
4. It adapts itself well to a one man operation.
5. It provides assurance of good quality hay.

To prove to himself how good his method was he decided to time himself. A field of Kenland red clover was cut June 19 at 2:00 o'clock. Approximately three-fourths of the blossoms were in full bloom. Raking was completed the same evening with a side-delivery rake because Mr. Merritt thinks it is a good policy never to let the sun set on hay left in the swath.

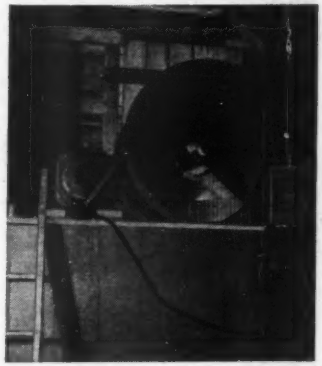
The following day at 2:30 o'clock the hay was dry enough so that it was impossible to wring water from the stems. The leaves were still tough and would not shatter. Another field test of scraping the stems with the thumb nail indicated the hay had a high moisture content. When the hay was oven tested, it contained 30 per cent moisture.

The eleven acre field, 60 rods long, was level and within one hundred feet of the barn. The windrows were bucked to the end of the field nearest the barn with a 9 by 11 foot tractor mounted buck rake traveling at 10 miles per hour while loading.

The buck rake load of hay (weighing 836 lbs.) was placed on a sling and, during the backing-out operation, the hay rope was hooked to the tractor and the hay was hoisted. The carrier was also pulled back into the mow with the tractor.

To eliminate the slow and tiresome task of climbing the conventional mow ladder, Merritt uses a homemade man-lift counterbalanced with weights. This makes it possible to elevate and lower himself in 5 seconds.

After raising himself to the mow, the tough hay was mowed back evenly over the slatted floor hay drying installation. Mowing back the hay was the only hand labor involved without mechanical aid. Even this was not too difficult because the hay came apart easily, it was firm to walk on and the air was cool with forced ventilation through the damp hay.

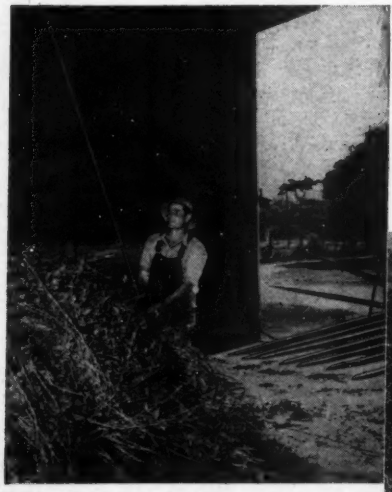


This 5 hp 36 inch electric-driven fan makes it possible to mow 30% moisture hay and still have safe storage. Thus, the leaves all go into the mow instead of shattering and dropping in the field. Good mow-cured hay is hard to beat.

The following break-down on time required was made on the one-man haying operation.

Operation	Time Required in Minutes
Loading Buck Rake	3½
Hauling and Returning to Field	3
Unloading and Elevating Hay	5½
Mowing Back the Hay	7½
Total Time Required for 836 Lbs. Hay	19½

The green loose hay dried easily with his 5 hp. electric motor and 36 inch fan. Although the hay was 11 feet deep in the mow, the air passed through easily and evenly. The hay was dried after 117 hours of fan operation with a total energy cost of approximately $14.00 for the 14 tons of hay.



Above: Arthur Merritt drops a buckrake load of hay on the sling, then hooks the hoist rope to his tractor. As he backs out, the load is raised into the mow. **Right:** With this counterweighted man hoist, Merritt can make the trip to or from the mow in five seconds.

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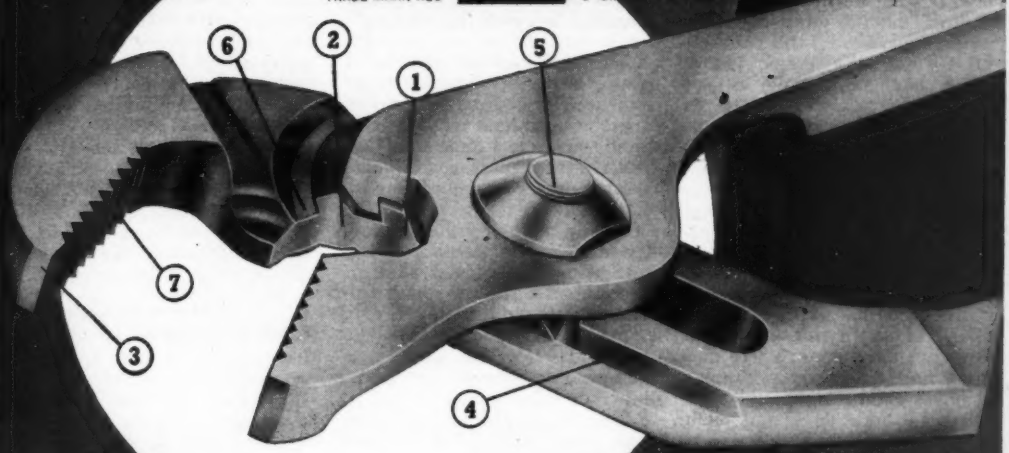

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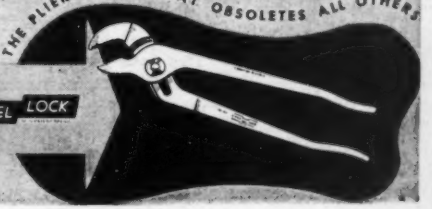

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Pump Nutrients into Silage

Molasses Aids Fermentation, Adds Food Value, Improves Palatability

By N. R. JENNINGS

Hay-crop silage can be made from any crop that is usually made into hay. Legumes, grasses, cereals, or any mixture of these may be used. The ensiling and feeding of hay crops have many advantages. Foremost, is that the hay crop is cut early in the season when it has its highest feeding value, and few of the nutrients are lost. Cutting the hay crop early for silage increases the second growth of most crops, giving better summer grazing or hay production. Other advantages are; early flowering species of weeds are prevented from seeding, the farm labor can be used more efficiently, field and storage losses are very low, and weather is not a controlling factor in the silage production.

Legumes and early cut grasses are much lower in sugar than is corn cut at the proper stage for silage. Due to this low sugar content the hay-crop silage may spoil and have an undesirable odor. A good supply of sugar is needed to form lactic and acetic acids from the fermentation to preserve the silage properly. The addition of preservatives can increase the sugar content so that correct fermentation can take place. Preservatives also aid in producing a good smelling silage that is more palatable to the animals.

It must be kept in mind that preservatives are not a "cure all." Preservatives will not prevent sliminess or mold in silage. Good storage conditions and the proper moisture content are also required for good hay-crop silage.

There are several choices of preservatives that may be used some of which are; ground grain, dried whey, food grade phosphoric acid, and molasses. Due to its effectiveness and relative cost, molasses is a good choice. Very little of the feeding value of the molasses is lost during the process of fermentation. The use of more molasses than is necessary for the proper preservation just adds to the feeding value of the silage. Cane molasses may also be used as an appetizer to increase the palatability of other feeds. It can be diluted with water and sprinkled over poor-quality and unpalatable hay or other roughages which the cows might otherwise waste. It can also be fed straight or mixed with grains.

Molasses may be obtained in tank cars, tank trucks, 55 gallon drums, and 5 gallon cans. For farm use, obtaining the molasses in 55 gallon drums is usually the best method.

Individual lots of molasses vary to some extent in their constituents, and temperature will effect its characteristics. The weight per gallon is approximately 12 pounds for temperatures below 100°F. Any increase of 10° to 15° in temperature will decrease the viscosity by one half, allowing twice as much molasses to flow through the same size pipe at the same pressure.

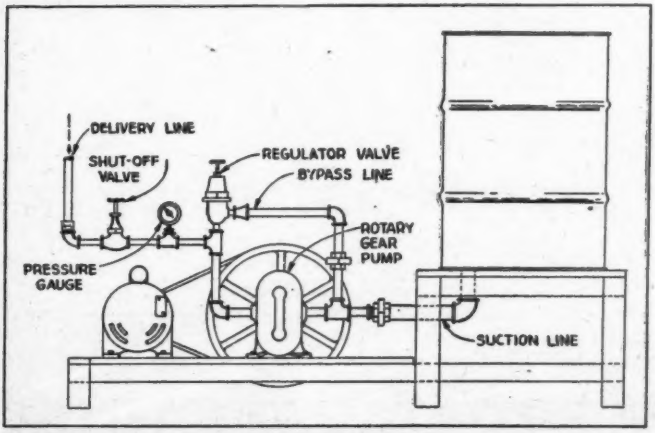
Undiluted molasses that is kept in tight steel containers such as the 55 gallon drums may be stored indefinitely. Water should not be allowed to get into the drums as this will cause fermentation of the molasses.

Application Methods

When molasses is added to hay-crop silage it is sometimes applied by means of a garden sprinkling can, but there are much better means of adding it to the silage. It may be transferred by gravity, air pressure, or by pump. The mixing may take place at two locations: (1) In the side of the blower or chopper fan housing, or (2) At the top of the discharge elbow within the silo.

The latter mixing location requires the use of a pump, additional pipe and other equipment. But there is the advantage of not having the molasses coating the inside of the blower pipe. This gumming quite often leads to the plugging of the pipe with silage. As most farmers know, the unplugging of a blower pipe can oftimes be a time consuming and patience trying job.

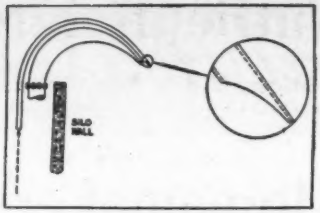
The equipment necessary for elevating the molasses to the top of the silo consists of the following: The 55 gallon supply drum, a suction line from the drum to the pump, a rotary gear pump, a by-pass return line, a regulator valve in the by-pass line, the delivery line, a shut-off valve in the delivery line, and



This diagram shows the proper location for the parts of a molasses pumping installation.

an electric motor. The sketch shows the layout of this equipment in the proper order.

The supply drum should be positioned so that the suction line is either level or sloping slightly downward toward the pump. This suction line should be of 2 inch pipe reduced near the pump to one inch, and it should be as short as possible. The pump should be a one inch rotary gear pump which is recommended for undiluted molasses which will become rather viscous on cool June days. A by-pass return line with a regulator valve is required to control the amount of molasses that is being delivered to the silage as well as to prevent excessive pressures from being developed when the delivery valve is shut off. The by-pass return line should start at the pump discharge side and either pass back to the top of the supply drum, or into a tee in the suction line as shown in the sketch. The regulating valve in this line should be a ground key valve or a standard pressure regulating valve. The delivery line should



To fan out the stream of molasses, the hose tip may be cut as shown, enlarged in circle.

be either one inch rubber hose, plastic pipe, or other suitable material. This molasses delivery line should go alongside the blower pipe to the top of the silo where it should be placed over the top of the discharge elbow. Some method should be used to fan out the stream of molasses so it will mix well with the silage. The sketch shows one method. The enlarged portion of the sketch shows how the hose can be cut back to break up the molasses flow. Another method of accomplishing this can be done by putting a small bolt through the end of the hose and drawing the hose down to a fan shape. The shut-off valve in the delivery line is used only to prevent the molasses from running back down the line when the pump is not running. This valve should be a standard gate valve.

The electric motor to be adequate for the above equipment should be at least ½ horsepower. Pump speeds from 275 to 325 rpm have been found to be satisfactory. By using a 2½ inch V-belt sheave on the motor and a 15 inch V-belt sheave on the pump, the speed of the pump will be within this range.

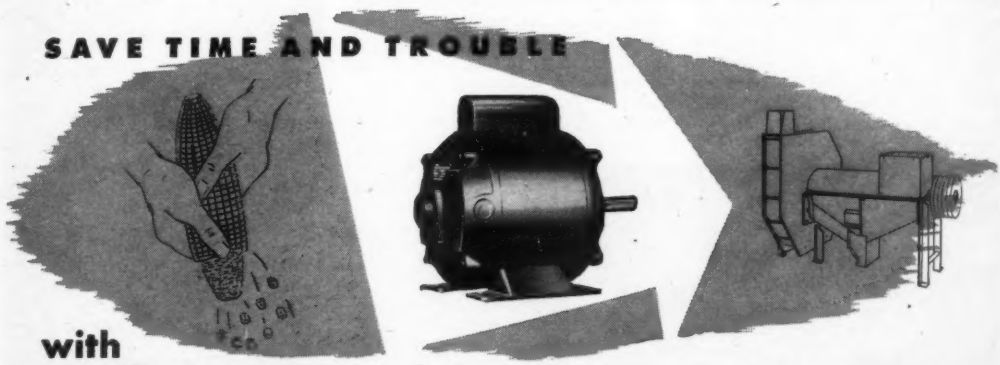
The amount of molasses needed for proper preservation varies with the crop and the following table gives approximate ranges for the rates of application.

Amount of Molasses Needed Per Ton of Hay-Crop Silage

Crop	*Molasses Pounds of*
Grasses	40-50
Grass and Legume Mixture	50-70
Legumes	70-80

With the use of this table and knowing the approximate rate of elevating silage, the correct rate

. . . . . (More on page 28)



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OFFICES AND STOCK POINTS IN PRINCIPAL CITIES

Farmer-Homemaker-Granger

Electrified Methods Provide Plenty of Time for Each

By C. H. POWELL

Esther Smith and her sister, Margaret, own and operate a 270 acre dairy farm located five miles Southwest of Smithfield, Ohio. Margaret, however, is a teacher in the public schools of Bellaire, Ohio, and has very little time to devote to the farm; therefore, most of the responsibility for operating the farm falls upon Esther and her herdsman, Howard Crothers.

Practically all of the farm's 270 acres are subject to cultivation under an intense program of soil and water conservation. The principal crops are corn, wheat, legume-grass meadows and permanent pastures. The emphasis in the cropping program is being shifted to a grassland-type of cropping system involving less grain production and greater production of higher quality grasses and legumes. "Grassland farming makes work less difficult," says Esther, "and helps in controlling erosion."

The principal source of income on the farm is the dairy herd. Her cows are good producers and their production is carefully watched and recorded through Esther's "owner-sampler" membership in the Dairy Herd Improvement Association. The constant development of higher-producing animals is carried on by membership in The Central Ohio Breeders Association, local agency for artificial insemination of cattle. Esther now plans to gradually replace her "grade" herd with high-producing, registered Holsteins.

Another income producer on the Smith Farm is the laying flock which, at present, consists of 400 Rhode Island Red hens. Production of the laying flock is continually improved by thorough culling of non-productive birds. A brood of 600 chicks, started in March, will provide replacement stock for the laying flock. The farm also boasts of five head of registered shorthorn cattle which form the nucleus of what will be a high quality, registered beef herd.

Esther is just as much at home in the milk house as she is in her kitchen. Here, a vacuum operated milk can hoist does the lifting for Miss Smith.

One would think that opera-

Miss Smith's kitchen, as you can readily see, is all electric. She feels that electrical equipment saves four hours daily in housework alone.

tion of a farm of this size would result in a rather confining and dull life. "That's absurd," says Esther, and her many organizational activities outside the farm seem to bear out her statement. She is most active in the Grange. She has held many positions in Smithfield Grange, is now Secretary of Jefferson County Pomona Grange, and last December was honored by her election to the position of Ceres of the Ohio State Grange. Esther is also well known for her "ready, willing and able" attitude to help in the programs sponsored by the various agricultural agencies of Jefferson County.

How is it possible for a woman to operate a farm with ease and efficiency and still have time to engage in so many worthwhile projects outside the farm operation? "It's quite simple," says Miss Smith, "but you have to decide that you, and not the farm, are boss or you, like so many farmers, will become a slave of the farm. We make the farm work for us."

Esther has found a faithful and invaluable servant in elec-

Esther works right along in all phases of the farming operation. She keeps close watch on production records and is constantly striving for greater efficiency.

tricity. The modern electric range in her neat, modern kitchen cooks the meals safely, clean and efficiently. Water supply and water heating are safely, dependably and economically accomplished by electricity. Electric power milks the cows, cools the milk, elevates baled hay and straw, de-beaks the laying hens, broods the chicks by infra-red radiation, and does countless other jobs around the farm and in the home. All this usage of electricity is, of course, exclusive of its most general application in lighting the farmstead.

Miss Smith is very appreciative of the vital part that electricity has played in the development of their farming program. She says, "We are always looking for new and more ef-

Trimmed beaks eliminate pick outs. Howard Crothers finds it a simple chore with this electric de-biller.

ficient ways to apply electric power to our farm work. We are trying to make life on the farm easier and more enjoyable, and electricity helps so much be-

An electric elevator handles the task of putting baled hay up into the mow.

cause it eliminates so much hard manual labor. With electricity, we have also been able to cut operating costs because we hire less labor."

As to the number of man hours saved by the application of electrical equipment on her farm, Miss Smith feels that without these modern applications, in her dairy alone, it would require an additional man on a full time basis.

In the home Miss Smith stated she would be forced to spend an additional 4 hours per day, doing housework which is now being done the modern electrical way.

"Electricity is the best, most willing servant we have ever had —and, best of all, it never talks back to you," says Miss Smith.

Electric Cooking's Cooler

USDA Tests Show

Combatting heat in your kitchen starts with an electric range. According to USDA studies, the difference in kitchen temperature rise may be as much as 16 degrees more with a flame-type range.

In cooking a 2-hour supper, under controlled tests, the temperature was 85 degrees both inside and outside of the kitchen with all windows closed. With the electric range, the room temperature rose to 98 degrees, while under identical conditions the other range raised the temperature to 114 degrees.

Humidity in the kitchen, when the flame-type range was used, ran from 18 to 100 per cent higher than when the electric range was in operation.

These laboratory-controlled tests were conducted inside a standard 12 by 15 foot kitchen floated inside a much larger room in which temperatures could be raised or lowered, breezes created, and measuring instruments used. The tests were made to determine the comparative efficiency of a low-

Electric kitchens, besides being attractive, are cooler. This is the modern kitchen which the Treiber's egg premiums (see story on page 5) helped provide.

cost electric range and a low-cost flame-type range.

Menus prepared, first on one range, then on the other, were supplied by the U. S. Bureau of Human Nutrition as being typical of complete meals eaten by a Georgia farm family of two adults and two children.

Figuring the cost of electricity at 3.5 cents per kilowatt-hour and the cost of the flame-type fuel at 9.5 cents a pound—higher than most rates for both services—it was determined from the experiments that over a period of a month electric cooking saved $1.15.

On these heavy farm meals the electric range consumed 140.8 kilowatt-hours at a total cost of $4.93, while the other range used 532.28 cubic feet of gaseous fuel at a cost of $6.08.

To prepare a complete week's meals for the Georgia family with the flame-type range, it took 30 minutes longer than the same meals cooked electrically. All meals prepared during the tests were cooked by methods used by a typical Georgia farm wife. No effort was made to use faster methods or special range features.

Fill Freezer Frequently

For Lowest Storage Costs

The more food that goes through your freezer, the less the operating cost per pound. It's using, not saving, food in the freezer that pays. If you live out of your freezer as much as possible and have a rapid turnover of frozen food, you make the most economical use of your appliance.

Empty space in your freezer is no economy. Even when food supplies in your freezer run low, the freezer uses just as much electricity on those vacant spaces as on frozen food that could be occupying them. So one rule for thrift and convenience is: Keep the freezer full. However, when food supplies are low may be the best time to defrost and wash the freezer, take inventory and repack, placing the oldest foods on top to use up first. It may be a good time to fill freezer vacancies with plentiful foods or good buys or with baked foods or cooky dough to save cooking time during your busiest days.

Empty space in your freezer is no economy. The compressor will run just as much as when the freezer is full.

Homemakers often ask if the freezing of food doesn't run up electric costs considerably. The motor does run a little more to freeze than to hold frozen food. But more than 90 per cent of the electricity used annually by a freezer is to hold foods at zero, and less than 10 per cent is for freezing, according to Dr. Earl McCracken of the USDA. The savings in freezing home-produced foods, or foods that can be purchased at low cost, more than offset the cost of current used for the freezing.

There are two things you should do to make sure of proper freezer operation. Locate the freezer in a cool, dry, well ventilated place where the motor will not have to run excessively and

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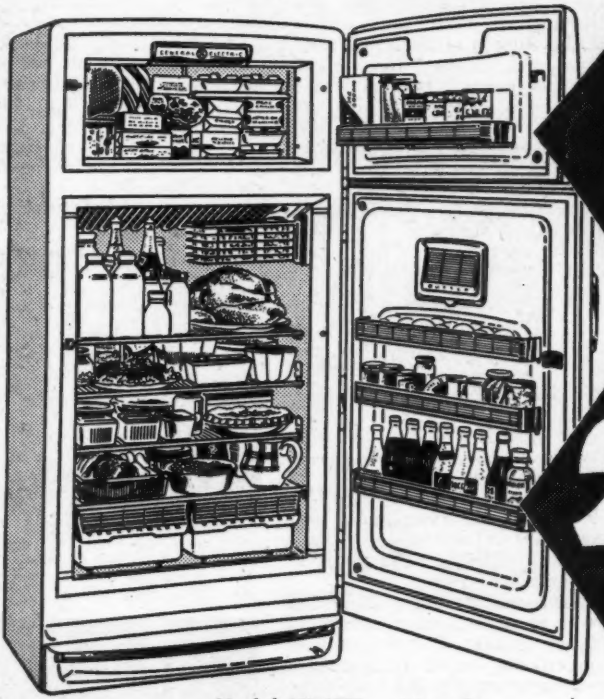

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where heat from the motor can escape easily. Have a separate electric circuit for the freezer to avoid overloading wires which strains and heats up the motor.

Don't worry about opening the freezer too much. In normal usage, the frequency with which it is opened has no appreciable affect on its cost of operation.

Now that the growing season

Don't wait for a large batch of peas. Prepare small amounts at the peak of their goodness.

is at hand, your freezer will have lots to do. Here is a table showing how many packaged pints you can expect from a batch of fruit or vegetables.

For 1 pint of frozen food, you need approximately:

Beans, lima (in pods)	2 to 2½ pounds
Beans, snap	2/3 to 1 pound
Berries (except raspberries and strawberries)	1⅓ to 1½ pint
Broccoli	1 pound
Cantaloupe	1 to 1¼ pound
Cherries, sweet or sour	1¼ to 1½ pound
Corn, sweet (in husks)	2 to 2½ pounds
Greens (collard, kale, spinach)	1 to 1½ pounds
Peaches	1 to 1½ pounds
Pears	1 to 1¼ pounds
Peas	2 to 2½ pounds
Plums	1 to 1½ pounds
Raspberries	1 pint
Strawberries	2/3 quart
Sweet Potatoes	2/3 pound

Scalding should be timed from point where water resumes a rolling boil.

Dependable arithmetic of this sort is your best guide when you line up your work, deciding how much packaging material to get out, how much sirup to make for a fruit, how much freezer space the packed food will require. Yield figures come in useful also when you make cost comparisons and decide which foods to freeze and how much.

These approximate amounts of fruits and vegetables that it takes to package 1 pint for freezing are based on research in the Bureau of Human Nutrition and Home Economics. There is bound to be some variation because yield depends partly on such factors as quality and maturity of the food, the way you cut or trim it, and the style of pack.

Chill the scalded peas in ice water. By allowing cold water to run through them, the process is hastened.

Two old favorites, as usual, will be going into freezers in large quantities. You can take green snap-beans right out of your garden now and keep them in your food freezer at the peak of their goodness up to eight months. If they've been processed and packaged correctly, they'll be almost identical to fresh beans in appearance, texture, flavor, and food value.

Select beans which are at the ripeness best for eating, and remember that the shorter the time from garden to freezer, the better the frozen product will be. Should you be delayed from immediately processing the beans, wash the beans in cold water to remove garden heat, then store in the refrigerator. Avoid storing over eight hours before processing.

Wash beans in cold water, snip ends, and cut into ¾-inch lengths. Place cut beans in a long-handled wire basket, and scald by lowering into a kettle of boiling water. Use at least one gallon of water for each pound of beans in the basket. Counting from the point where the water returns to a rolling boil after the beans have been lowered into it, agitate beans for two minutes by moving the basket back and forth through the water.

Remove from boiling water, and immerse immediately in ice water, two gallons ice water to each pound of beans, for about three minutes, or until beans are cooled to water temperature. Allowing cold water to run through beans will quicken the process. Water should never be warmer than 50°F.

Remove basket from cold water bath and drain beans thoroughly. Fill moisture-vapor-

Leave about ½ inch of head space in these containers to allow for expansion during freezing.

An electric iron can be used to seal the moisture proof sack before closing this type of package.

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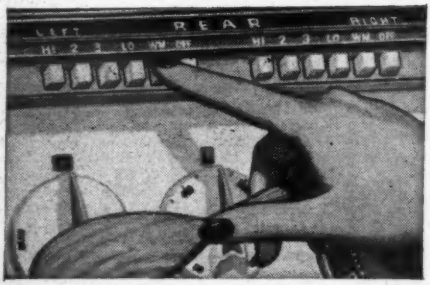

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Master Oven holds meal for 18 to 24 . . . automatically timed to cook while you're out. Both ovens completely equipped to bake, roast, broil. General Electric Company, Louisville 2, Kentucky.

**Prices and specifications subject to change without notice.*

GENERAL ELECTRIC

proof containers, leaving about ½-inch head space to allow for expansion. Label containers, indicating contents and date packaged, and place in fastest freezing area of the freezer.

To Freeze Peas

Peas are best for canning and freezing when they're just right for table use. That means you'll put up just a few jars at a time. If you wait for a big batch to can or freeze, the few overripe peas will spoil the quality of the whole batch. And the food value will be reduced. The main claim peas have to nutritional value comes from their pep-giving riboflavin content and vitamins A and C.

It's equally important to good flavor and high food value to get peas into the freezer as soon as possible after picking. In that way you can have that fresh-from-the-garden flavor. Wash, rinse, drain and shell the peas; then rinse them again in a colander. Scald them 1 pint at a time. Put each pint into a wire basket or a cheesecloth sack and lower into a large kettle of boiling water for 1 minute. Four or 5 gallons of water are necessary unless you have the quick heat of an electric range to keep a smaller amount of water continuously boiling.

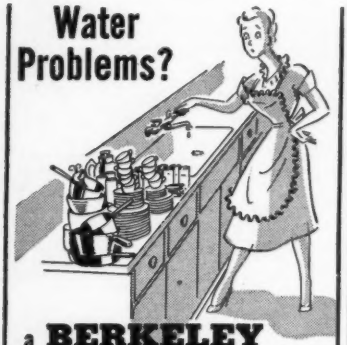
After the scalding, the peas should be cooled quickly. Dip the basket into ice water and shake it or place it in cold running water. For safest keeping, cover the peas in the containers with a brine made from 1 tablespoon salt in 1 quart of water. The peas are then ready for freezing.

Broiler Beefsteak

Broiling is an ideal method for cooking tender beefsteaks. It's done by applying direct heat to the meat and gives an especially fine flavor to tender meat containing enough fat to prevent dryness in cooking. Ideal for broiling are the better grades of tenderloin, sirloin, T-bone, rib or club steaks—all cuts from the more tender muscles of the side of beef. U. S. Grade Choice will contain somewhat more fat and be more tender and juicy when broiled, but U. S. Grade Good with more lean may be a more economical buy and satisfactory for broiling. When buying steak for tenderness, look for fine-textured lean, well-mar-

Location of the broiler pan is determined by the steak's thickness and how well it is to be cooked.

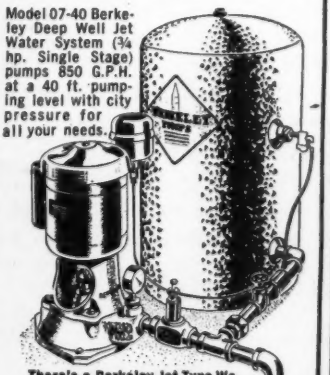
Water Problems?



a BERKELEY pressure system will solve them

With a Berkeley Modern Jet System you can always have plenty of water for household use and to keep your garden watered. Berkeley Water Systems are inexpensive to operate and give years of trouble-free service.

Model 07-40 Berkeley Deep Well Jet Water System (¾ hp. Single Stage) pumps 850 G.P.H. at a 40 ft. pumping level with city pressure for all your needs.



There's a Berkeley Jet Type Water System for your particular need. Write for BULLETIN 511

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HOME HEALTH

HOME PASTEURIZER
for milk and cream

NEW — Dual Heat Principle
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NEW — Faster Method

Here at last—a 2 gallon large family size pasteurizer that's compact and lightweight. Heating elements in both cover and base give double assurance of complete bacteria kill. Completely automatic—a flick of the switch, it does the rest. An attractive appliance with no moving parts to get out of order, no water jacket to fill. Laboratory tested. U. L. Approved. Guaranteed for one year.

Also available—popular one gallon size for small families.

Write for free folder on prevention of milk-borne diseases through positive pasteurization—the Home-Health way.

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WAREHOUSES IN U.S.A.

bled with fat, and look for red, porous bones—signs indicating that the steak has come from young, well-fed beef animals.

For home-broiling, a steak 1 to 2 inches thick is suggested. Slash fat at the edges of the meat to prevent its curling as it cooks. Preheat the broiler and grease the broiler-rack lightly to keep meat from sticking to it.

Important for successful broiling is placing the steak at the right distance from the heat. This calls for some judgment. Generally the rule is to have the top of the meat 2 inches from the heat if you want the steak rare, or 3 inches if it is to be well done. Thick steaks should be placed farther from the heat than thin steaks because they need slower cooking. The oven door should be left open, or ajar, during broiling, not only to allow the cook to keep watch of the browning, but also to allow for an intake draft of cool air across the bottom of the broiler pan to keep the fat from getting too hot.

Broil steak until the top side is browned to your liking, season, then turn on the other side. Browning the other side may take less time because the meat is hot by the time it is turned. If a fork is used to turn the steak, stick it into the fat, not the lean, to save juices from running out. Turning with tongs is safer and easier.

Approximate Timetable for Broiling

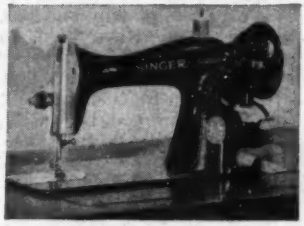
No exact time for broiling can be given because broiling arrangements differ in different ranges, people differ in the doneness they like, and the meat itself differs. But here is an approximate time table prepared as a guide by cookery specialists of the USDA:

For steak 1 inch thick: Rare, total time about 10 minutes—or 5 minutes for each side; medium, about 15 minutes; well done, about 20 to 25 minutes.

For steak 1½ inches thick: Rare, about 15 minutes; medium, about 20 minutes; well done, 25 to 30 minutes.

For steak 2 inches thick: Rare, about 25 minutes; medium, about 35 minutes; well done, about 45 to 50 minutes.

Only SINGER offers you all 3



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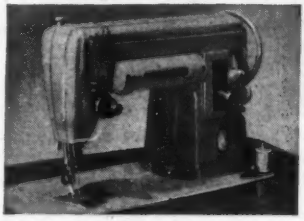
Finest zigzag machine. Does lovely plain sewing. Embroiders, makes buttonholes, sews on buttons—*without* special attachments.



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Please send me free illustrated folders on all 3 types of SINGER* Sewing Machines.

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Coal-Wood-Electric Baking with DIALED Heat

Just set the dial at the oven temperature desired. Electric heat is added automatically to the coal-wood heat to *hold* oven at the heat set! Takes the guesswork out of baking. No more constant fire-watching. Cooking top is half coal-wood, and half electric. See your Monarch dealer or write

Monarch SINCE 1896

MONARCH RANGE CO.
7023 Lake Street
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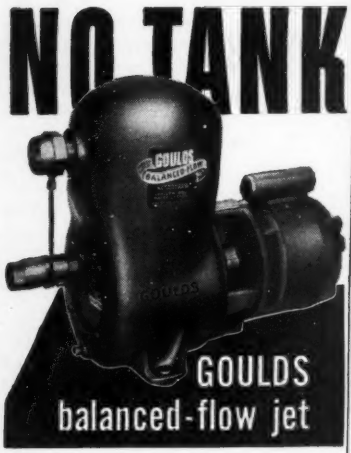
Here's the pump that

NEEDS NO TANK



New convenience—new savings! You actually save because there's no costly, bulky tank, fewer fittings to buy—yet the Balanced-Flow gives you performance and features found in no other pump at *any* price! Delivers a full, steady flow of *fresh* running water at any number of outlets at the same time (within pump capacity). Fully automatic, quiet, compact, only *one* moving part—lubricates itself, *can't* lose its prime. Install it anywhere . . . for real "city water service" miles from city mains!

Goulds Tank Mounted Deep Well System

An inexpensive deep well jet system designed *especially* for pumping levels up to 50 feet. Goulds quality throughout . . . dependable, efficient, economical! Other tank mounted systems available for shallow wells.

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Please send me free 20-page illustrated book telling how to select the correct water system. Include name of my nearest distributor.

Name .....

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Perfect Sweet Spreads

Now is the time to tuck away glasses of jelly and jam for extra treats. Have them ready for the fair and special remembrances for shut-ins, hospital trays, and for Christmas gifts.

How can you be sure your jelly will be "Pretty as a picture"?

The most common jelly problems are undesirable color and flavor changes, failure to jell, cloudiness, sugar crystallization, and mold or fermentation.

Because long exposure to heat is harmful both to jelly color and flavor, the best methods reduce cooking time to a minimum for jams, jellies, and preserves. Red and blue fruit colorings are particularly affected by heat changes, becoming dull brown on overcooking. Light colored fruits, like apples, often contain tannin, which tends to break down during cooking and discolor the product. The substances giving fruits their flavor are also broken down by long cooking and are driven off in the steam. Overcooking may in addition caramelize some of the sugar.

Of course, enough cooking is necessary to concentrate the sirup, to encourage it to penetrate the cell walls, and affect the texture of the fruit tissues. But in general, the longer a fruit product is cooked, the more it changes in color and flavor. One way to avoid overcooking is to use a large kettle so that the evaporating surface will be as great as possible.

If jelly fails to form, chances are that there is an improper balance of pectin, sugar, acid, and mineral salt. When fruits lack sufficient acid or pectin to begin with, this improper balance results. In that case, use lemon to increase the acidity or add a commercial product to increase the amount of pectin. Avoid using so much water that the proportion of sugar is too great for the pectin. And here is another good reason for avoiding overcooking—so much pectin may be destroyed that a gummy mass instead of a jelly is formed.

Cloudiness in jelly can come from improper straining, and usually occurs with the red juices. While re-straining a juice without pressure brings a lower yield, it insures a clear product. Straining through a flannel cloth is a good idea.

Sugar crystallization can result from any of several different causes—too much sugar, not enough acid, overcooking, or too great a delay in sealing.

Unless jams, jellies, and preserves are properly stored they may spoil in time. If they can't be stored in a cool dry place, be

Jelly making time is a good opportunity to let the youngsters help out. They'll get a kick out of it, too.

sure to use air-tight containers.

Preserves are successful when the fruit holds its shape in the sirup and yet remains tender. The secret is to use the sugar differently for different types of fruit. Sugar has a firming effect on fruit tissues.

Add sugar straight to tender, juicy fruits like cherries and strawberries. Let these fruits stand overnight in the sugar, and they'll become firmer and be less likely to go to pieces in cooking. The sugar draws out the juice and shrinks the fruit somewhat, but the juice gives enough liquid so that no water need be added. This shortens the cooking time. Shorter cooking results in better color and flavor.

Juicy fruits with a firm skin,

If jams are allowed to cool slightly before ladling into jars, the fruit will be less likely to float.

like plums, don't need overnight firming. Because they're juicy, put them in thick sirup, which helps keep their shape as they cook.

Their juice, as it cooks out, thins the sirup the necessary amount.

Put firm fruits like crabapples in thin sirup to cook. Thick sirup toughens them. When put in thin sirup, they have time to cook tender while the sirup boils down. Another way to deal with these fruits is to steam or precook them in water to make them tender before sugar is added. This method should be a second choice, however, be-

"Sure, it costs more... but it's worth it!"

You're getting a lot more mixer when you get a *KitchenAid*—"round the bowl" mixing action, *plus* built-in power, is worth the extra price alone! Single beater goes completely around the inside surface of the bowl, scraping as it travels, assuring more thorough mixing *than any other mixer!*

And you do so many food preparation jobs with the practical *KitchenAid* attachments—*without* expensive power boosters! For literature, write *KitchenAid* Electric Housewares Division of The Hobart Manufacturing Co., Dept. KEF, Troy, Ohio.

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The Finest Made... by Hobart

The World's Largest Manufacturer of Food, Kitchen and Dishwashing Machines

FOWLER *Glasslined* Water Heater

NO RUST. NO CORROSION. LONGER SERVICE.

SPARKLING CLEAN HOT WATER ALWAYS!

There's no finer water heater than a Fowler with *glass-lining*. Water never touches metal in a Fowler. Two coats of smooth, durable porcelain are fused-to-steel inside the tank. This glass-lining, developed by Fowler, prevents rust and corrosion; keeps water pure, sparkling clean.

Fowler electric water heater operates efficiently, economically. All models are backed by a 20-year prorated warranty. See Fowler at your dealer's, or write for full information.

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By using a fast, efficient Booms Wagon Unloader, you can easily handle 5 tons of any crop in just 7 minutes. Simply attach this tested, proved unit to any flat-bed wagon; team it with any blower, elevator or conveyor; and hook it up to either gas or electric power. It will never tip, tilt or turn over . . . and there are two running speeds for constant load control. See your dealer or write for an illustrated folder.

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SAVE TIME AND LABOR

cause the fruit is likely to be overcooked and flavor lost in the precooking.

Here are several jam and jelly recipes I'm sure you'll want to try:

Cherry Jelly

(Makes about 8 six-ounce glasses)
3½ cups juice
4½ cups sugar
1 box powdered fruit pectin

TO PREPARE THE JUICE. Stem and crush thoroughly (do not pit) about 3 pounds fully ripe sour cherries. Add ½ cup water; bring to a boil and simmer, covered, 10 minutes. Place in jelly cloth or bag and squeeze out juice. Measure 3½ cups into a large saucepan. (For a stronger cherry flavor, add a few crushed cherry pits during simmering, or add ¼ teaspoon almond extract before pouring jelly.)

TO MAKE THE JELLY. Measure sugar and set aside. Add powdered fruit pectin to juice in saucepan and mix well. Place over high heat and stir until mixture comes to a hard boil. At once stir in sugar. Bring to a *full rolling boil* and *boil hard 1 minute*, stirring constantly. Remove from heat, skim off foam with metal spoon, pour quickly into glasses. Cover jelly at once with ⅛ inch hot paraffin.

Blackberry Jelly

(Makes about 8 six-ounce glasses)
3½ cups juice
5 cups sugar
1 box powdered fruit pectin

TO PREPARE THE JUICE. Crush thoroughly about 2½ quarts fully ripe blackberries (not blackcaps). Place in jelly cloth or bag and squeeze out juice. Measure 3½ cups into a large saucepan.

TO MAKE THE JELLY. Measure sugar and set aside. Add powdered fruit pectin to juice in saucepan and mix well. Place over high heat and stir until mixture comes to a hard boil. At once stir in sugar. Bring to a *full rolling boil* and *boil hard 1 minute*, stirring constantly. Remove from heat, skim off foam with metal spoon, and pour quickly into glasses. Cover jelly at once with ⅛ inch hot paraffin.

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4803—Double value for your sewing. Wear it as a wrapron with a low cut neckline or as a brief cover-up apron. Misses' sizes 12-20; also 40. Size 18 takes 4⅛ yards 35-inch fabric.

4704—Ideal warm weather dress for the shorter, fuller figure. Bow-tied pie-cut neckline, graceful skirt. Half sizes 14½ to 24½. Size 18½ takes 4⅝ yards 35-inch fabric.

Send THIRTY-FIVE CENTS (in coins) for EACH pattern to: ELECTRICITY ON THE FARM, 196, Pattern Department, 243 West 17 Street, New York 11. Add FIVE CENTS for EACH pattern if you wish first class mailing.
IN CANADA: 60 Front Street, Toronto, Ontario.

Raspberry Jam

(Makes about 11 six-ounce glasses)
5 cups prepared fruit
7 cups sugar
1 box powdered fruit pectin

TO PREPARE THE FRUIT. Crush thoroughly about 2½ quarts fully ripe red raspberries. (If desired, sieve half of pulp to remove some seeds.) Measure 5 cups into a large saucepan.

TO MAKE THE JAM. Measure sugar and set aside. Add powdered fruit pectin to fruit in saucepan and mix well. Place over high heat and stir until mixture comes to a hard boil. At once stir in sugar. Bring to a *full rolling boil* and *boil hard 1 minute*, stirring constantly. Remove from heat. Skim off foam with metal spoon. Then stir and skim by turns for 5 minutes to cool slightly, to prevent floating fruit. Ladle quickly into glasses. Cover jam at once with ⅛ inch hot paraffin.

Blackberry, Cherry, and Raspberry Jam

(Makes about 10 six-ounce glasses)
4 cups prepared fruit
6 cups sugar
1 box powdered fruit pectin

TO PREPARE THE FRUIT. Crush thoroughly about 1 pint each fully ripe blackberries and red raspberries. Stem and pit about 1½ pounds fully ripe sweet cherries. Chop fine. Combine fruits and measure 4 cups into a large saucepan.

TO MAKE THE JAM. Measure sugar and set aside. Add powdered fruit pectin to fruit in saucepan and mix well. Place over high heat and stir until mixture comes to a hard boil. At once stir in sugar. Bring to a *full rolling boil* and *boil hard 1 minute*, stirring constantly. Remove from heat. Skim off foam with metal spoon. Then stir and skim by turns for 5 minutes to cool slightly, to prevent floating fruit. Ladle quickly into glasses. Cover jam at once with ⅛ inch hot paraffin.

Summer Comfort

Plan your electric wiring so that you can spend more of your waking—and sleeping—hours on the porch and lawn this summer.

Put enough convenience outlets on the back or side porch to plug in several reading lamps, a radio, electric clock, fan and cooking appliances. Be comfortable and relaxed after a hard day's work.

While you're about it, consider the advantages of doing some of the housework, such as ironing and sewing, in these cooler out-of-doors areas. If this provides the answer to hot weather ironing, install a heavier circuit for high wattage appliances such as the iron, ironer and hot plate and other cooking appliances.

Have convenience outlets on your porch so that you may use such appliances as a toaster, grill, percolator, and fan.

For this living comfort on porches, there should be at least one duplex convenience outlet installed every 15 feet of house wall. A central lighting fixture, wall switch controlled, is considered a must for each 150 square feet of porch area.

On terraces or sides of houses you will want special weatherproof convenience outlets on every 15 feet of house wall. Be sure to place them 18 inches above the floor line.

For outdoor lighting protection against strangers, you'll need one light on the building wall or, if you prefer, on a centrally located post. Both types should be switch controlled from the house.

Electric tools and gardening aids, such as the electric lawn mower, hedge clipper, bug traps, electric saw, or drill can be used most efficiently when special outdoor wiring is provided. Weatherproof convenience outlets should be installed on the outside walls of the house near spots where tools will be used. You may also want to plan for outdoor lighting for nighttime parties, picnicking or games such as croquet, handball, tennis, horseshoe pitching and basketball.

Time for Cold Cuts

When you serve cold cuts, your hungry family can really have a satisfying meal on a hot day if you have an appetizing assortment.

Start at the meat counter by selecting small amounts of several varieties of table ready meats. Select them with an eye for contrast in flavor, color, texture, and shape. Your platter will be more attractive, and you're sure of satisfying every taste preference.

A good guide is to choose at least one meat from each of the three classes: Meat loaves, such as minced specialty or pickle

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There's true economy in choosing the right pump for the job! And that's why you buy right when you choose Sta-Rite . . . the complete line of water systems, with a model for every farm's requirements. You choose real quality with Sta-Rite, too . . . every unit is rigidly inspected and controlled to produce the best in efficiency, economy and dependability. See the Sta-Rite line . . . for the best in modern water systems.

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and pimiento loaf; table ready meat sausages, such as braunschweiger and bologna; and dry

sausages, such as salami and cervelat.

At home, wrap table ready meats loosely in waxed paper and store in the refrigerator. Plan to use them within a week for best flavor and freshness.

Handy—and Economical

With a gallon of ice cream always on hand in your freezer, you can surprise your family and friends with refreshing desserts at a moment's notice. And buying ice cream by the gallon is economical, too—because a gallon will cost you considerably less than four separate quart containers.

Molasses Pumping

. . . . . (Here from page 15)

of molasses delivery can be calculated and then obtained by adjusting the regulator valve. To estimate the amount of silage that is being elevated, measurements of wagon box or truck box may be taken to give the approximate volume of silage in cubic feet. Dividing this volume in cubic feet by 100, the weight of the load in tons is obtained. Usually the loads of hay-crop silage will average 2½ to 3 tons when using a wagon.

The rate of molasses pumping can be measured by using a measuring stick marked off in inches and held in the 55 gallon drum. A drop in the molasses level equals about 20 pounds of molasses.

An example of the calculations necessary for computing the rate of molasses pumping follows.

Assume the crop being ensiled is a legume and grass mixture such as alfalfa and timothy, and the wagon loads are approximately 3 tons each. For this crop the amount of molasses needed per ton from the above table is 50-70 pounds or approximately 180 pounds for the 3 ton load. The drop in the level of molasses for the 180 pounds would be 180 divided by 20, or 9 inches. This would be the total drop in the molasses level for the entire 3 tons of silage. This rate can be adjusted with the regulator valve and should be checked periodically with the measuring stick.

To keep the desired rate of delivery of molasses, changes will have to be made at the regulator valve throughout the day as the temperature rises, lowering the viscosity of the molasses. A 0-200 pound pressure gage installed in the delivery line will greatly aid in keeping the desired rate of flow. After the rate is determined by the measuring stick, the pressure gage can be used for maintaining that flow as the temperature varies. The adjustments are easy and with a little experience the operator knowing the air temperature can tell close enough by glancing occasionally at the pressure gage what rate of molasses is being applied and what adjustment, if any, is needed.

It must be remembered that the use of more molasses than is necessary for proper preservation increases the cost but adds to the feeding value of the silage. Too little molasses may allow improper fermentation and resulting bad silage.

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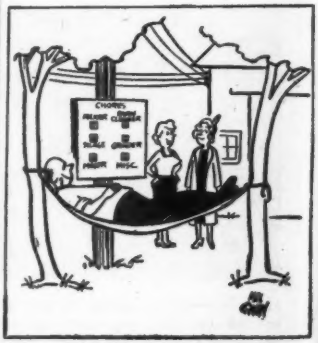
Not even milking machine pails or releasers

The T-20 ZERO SYSTEM is a climax to forty years of experience in all fields of milking. With the T-20 ZERO SYSTEM there are no instructions as to what to do with the milk; *it is taken care of direct from the cow and* VACUUM REFRIGERATED IN MILK TANK. There is no walking and carrying the milk through doorways or vestibules. You do not have to work all day cleaning up after milking. You are through almost at the same time the milkers stop. Man-hours are expensive and anything that saves man-hours is worth your consideration.

ZERO MANUFACTURING COMPANY, 618-F Duncan, Washington, Missouri



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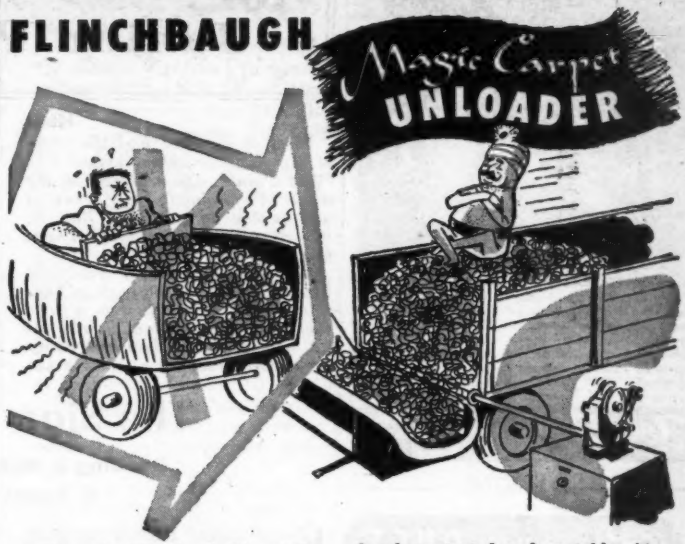
HARRUMPHED the CUSTOMER: "That chicken I bought yesterday had NO wishbone!" BUTCHER (smoothly): "It was a happy and contented chicken, madam, and had nothing to wish for." . . . . JUDGE: "Are you GUILTY or NOT GUILTY;" PRISONER: "It SEEMS to me THAT is a mighty personal question." . . . . Bennett Cerf, in GOOD FOR A LAUGH tells the story of a hermit in an obsolete jalopy who was apprehended driving in Pomona, California, at 70 miles an hour. The charge, of course, was RECLUSE driving . . . . Some men always keep to the same routine—wine, women and s'long . . . . Hollywood has developed a new deal—a combination horse opera and murder mystery. It's called a WHOA-DUNIT . . . . YES: the answer to any question the boss asks. Also a MARRIED MAN'S last word . . . . "Isn't there a SMARTER clerk available to serve me?" "No, ma'am—the smarter clerks saw you coming." . . . . Sign in a leather-goods store window: "With our luggage, you CAN take it with you." . . . . Sign in a book shop: "We like BROWSERS. We LOVE customers." . . . . These new compact homes are terribly convenient. If you are in the living room and want to go into the bedroom you just stay where you are . . . . Robinson Crusoe was the first man to have a 40-hour week. HE had all his work done by Friday. (Caw! Caw) . . . . Low-down payment: first installment on hush money . . . . AFTER-DINNER MINT: what you need when the waiter brings you the check . . . . BEAUTY SHOP: a place where they put a new TOP on an OLD CHASSIS . . . . GUM—what makes things stick to you—GUMPTION—what makes YOU stick to things . . . . The LITTLE - BOY - DOWN - OUR - STREET was watching TV with us a few nights ago and surprised us by saying, "I hear your supper didn't agree with you." Puzzled, we asked, "How, did you find THAT out?" "Oh," he replied airily, "A little BURP told me." . . . . DAIRY FARMER: a fellow who can be identified thusly—all that he owes he owes to udders . . . . A delicatessen is the chief obstacle in the way of teaching some women to cook . . . . Your pun-peddler—DUFFY.

YOU CAN'T OVERLOAD A FLINCHBAUGH



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EASY! Mount roller unit with four bolts and you're ready to go! Nothing extra to buy . . . nothing extra to build. No lifting of your power unit . . . it's closed, protected and portable. Attaches instantly at any height.

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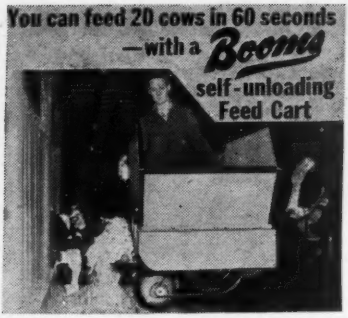

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GRAND SHEET METAL PRODUCTS COMPANY
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for Junior Partners

HI—

Most of us have had the urge, at sometime or other, to see if a "Wet Paint" sign was telling the truth. It probably was when it was placed in position. But, by its nature, such a sign is often open to suspicion.

All signs are not of this type, however. And, if we wish to have things run smoothly, it is a good idea to observe them and make use of their advice. Electrical equipment carries such a sign. It is usually a part of the maker's name plate. On it, you will find the specifications for the conditions under which it should operate.

Typical of these is the one you'll find on an electric motor. There isn't much room for flowery descriptions, but there is room to tell what it can do and what it needs. Take time to read it before you put the motor to work. You'll be better pleased with its service.

Kenneth V. Anderson

The Sign of Power

Reading a Motor Nameplate

By ROBERT T. SCOTT

Every motor carries its pedigree on the nameplate attached to it. The pedigree is written in motor language—actually in motor language shorthand—but is easy to understand if you have an idea what the manufacturer is trying to tell you. And understanding it can help you make the best possible use of the motor.

Who Made the Motor

One of the first things you will notice on the motor nameplate is the manufacturer's name. Many times the manufacturer's address will also be included. You may need this information if you have to contact the manufacturer about the motor or if you ever need parts for the motor.

Type of Motor

There are different types of motors, each suited for a certain job. The manufacturer often tells what type motor you have in code letters and also names the type motor on the nameplate. Alternating current motors less than one horsepower are of three types: split-phase, capacitor (CAP), and repulsion-start induction-run. The first two types are the most popular today. These motors differ in the way they start and come up to the speed at which they normally operate. For the same horsepower there is no practical difference in the work they do after they get up speed.

A handy rule of thumb for split-phase and capacitor motors of less than one horsepower is: use a split-phase motor if the equipment is easy to start; use a capacitor motor for equipment hard to start.

"HP"—Work It Can Do

Every motor is rated in horsepower—abbreviated on the nameplate as HP. This is a unit for measuring power. It is the rate at which the motor can do work as compared to dray horses which worked over an 8-hour period in London prior to the year 1800.

A motor develops one horsepower if it develops mechanical power equal to 33,000 foot-pounds of work a minute. You can understand this better when you know that if you lift one pound of grain one foot you do one foot-pound of work. You would have to lift 33,000 pounds of grain one foot in one minute to develop one horsepower.

If a ¾ horsepower motor operates at 100% efficiency it can do 11,000 foot-pounds of work a minute. A ¾ horsepower can do 24,750 foot-pounds of work a minute.

You should not ask a ¾ horsepower motor to do a ¾ horsepower job. Motors will try to do whatever job you put them on and will burn themselves out trying.

"RPM"—How Fast It Turns

The RPM on the nameplate tells the approximate speed at which the motor shaft turns if

the motor is connected properly and doing the amount of work it is designed to do. RPM stands for revolutions per minute. The most usual speeds of fractional horsepower motors used on the farm and in the home are approximately 1725 revolutions per minute or twice that speed—3450 rpm. Motors are also available that operate at 1140, 865, 680, or 565 rpm. The varying speeds depend on the way the motor is wound.

The speed at which a motor turns a piece of equipment can be increased of decreased through the use of pulleys. Again it is useful to know a general rule: a small pulley on the motor and a large pulley on the equipment decreases speed; a large pulley on the motor and a small pulley on the equipment increases speed.

When you know the speed of the motor and the speed at which a piece of equipment should operate, you can use the following formula to determine what size pulleys to use:

$$\text{Diameter of pulley on motor} \times \text{speed of motor} = \text{Diameter of pulley on equipment} \times \text{speed of equipment}$$

Or to put it another way:

$$\frac{\text{Diameter of pulley on motor}}{\text{Diameter of pulley on equipment}} = \frac{\text{speed of equipment}}{\text{speed of motor}}$$

Sometimes the speed must be reduced in two steps with four pulleys and two belts. To work out the pulleys to use on such a speed reducing unit apply the formula twice.

"V"—How Much Voltage?

The volt is the unit used in measuring electrical pressure in a current and V is the abbreviation for voltage on the motor nameplate. The lights in our homes, our radios, vacuum cleaners, and other small appliances operate on 115 volts. The electric range operates on 230 volts. Motors may operate on 115 volts, 230 volts, or some on either 115 or 230 volts. Check the nameplate of the motor to be sure you connect the motor to the proper voltage.

When a motor operates on either 115 or 230 volts it is often marked 115/230. However when the motor is changed from one voltage to another, changes must be made in the connections inside the motor junction box. Directions for these changes come with the motor.

"A"—How Much Current Flows?

Stamped on the nameplate is the "A" or ampere rating of the motor. This is the approximate amount of current in amperes that will flow through the motor windings when the motor turns at its rated speed, develops its rated horsepower, and is connected to the proper voltage. If the motor is not doing the the amount of work it is rated to do, less current will be consumed, and the amount of current stamped on the nameplate will not be flowing through the motor circuit.

When the motor starts, it may require 5 or 6 times the amount of current marked on the nameplate. This is necessary to get the motor started and to bring it up to speed. However, under normal conditions this

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amount of current is flowing through the circuit a very short time—a few seconds at the most.

Excessive current flow that might damage the motor can be caused by the voltage being too low or by the motor turning too heavy a load and being slowed down. If a motor is stalled the motor windings become practically a short circuit and the motor can be seriously damaged if it is not protected by automatic protective devices or shut off by the operator. Any protection should be based on the individual ampere rating of the motor involved.

"Temp Rise"—How Hot It Gets

The "Temp Rise" is the number of degrees the motor will warm up when it is used properly—connected to the proper voltage and not overloaded. The temperature rise of the motor under favorable operating conditions is given in degrees centigrade. A centigrade thermometer is one on which the interval between the freezing point of water and the boiling point of water is divided into 100 parts or degrees. Zero degrees Centigrade (C.) corresponds to 32 degrees Fahrenheit, and 100 degrees C. corresponds to 212 degrees F. To convert from Centigrade to Fahrenheit multiply by 1.8 and add 32. Thus if a motor is rated to have a temperature rise of 50 degrees C. it should not heat up more than 122 degrees F. This temperature rise is measured with a thermometer on the hottest part of the motor winding.

A motor should be kept clean so that air can circulate freely as planned by the manufacturer. Dirt, dust, and lint will keep a motor from breathing and may cause it to overheat.

"Cy"—Frequency Required

On alternating current motors we usually find a 60 after the "Cy"—abbreviation for cycle. Alternating current moves in one direction and then in the other through a circuit. The number of times a second the current moves in one direction and then in the other is the frequency. Sixty-cycle alternating current moves in one direction and then in the other 60 times a second. This is the standard type of electric service most frequently supplied.

A direct current motor does not have any frequency indicated, since direct current alway flows in one direction. A universal motor operates on either alternating or direct current.

"Time Rating" or "Hours"

On the nameplate the manufacturer usually tells you whether the motor is designed to be used continuously or whether it is to be used on a start and stop basis. If after "Time Rating" or "Hours" the manufacturer has stamped "cont" this means the motor can be used continuously to do the work it is designed to handle without the temperature rising more than the designated number of degrees. On some motors the manufacturer will stamp the number of hours the motor can be operated safely.

Other Nameplate Information

There is other information on the nameplate, such as the serial number. However, most of it is of special significance to the manufacturer. If you have occasion to write the manufacturer concerning a motor, or if you need a part for a motor, give all the information on the nameplate. This will give whomever you contact any and all information he may need to give you the service you want.

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Questions and Answers

Electric Consumption

▶**Question:** *Is there any rule or equation that one might use when planning the amount of kilowatt hours used by an appliance with a given number of watts.*

J. R., Indiana

▶**Answer:** To find the kilowatt hour consumption of an electrical appliance, multiply its wattage (you should find this figure on the nameplate) by the hours of operation and divide it by 1,000. This will give you its consumption for any given period. Stated another way, divide the wattage of the appliance by 1,000 and you will have the kilowatt hours it will consume for each hour of operation.

Poultry House Service

▶**Question:** *I have a poultry house 400' from the meter and I would like to supply electricity for four fans of 1/6 HP each and twelve 60 watt lamps. I was thinking of using #6 trench wire buried in the ground. Would this be satisfactory?*

R. B., Connecticut

▶**Answer:** Three #6 wires, providing the building with 220 and 110 volt service, will be adequate. Trench wire will be suitable if it is properly installed. It does seem that the equipment you list may be increased as time goes on. In such cases replacement of a circuit that has grown too small can be both expensive and frustrating. I suggest that you contact the Rural Representative of your power supplier and obtain his help in planning the installation.

Water Heater Operation

▶**Question:** *My husband wants to install an electric water heater in place of an oil heater. It has always been my impression that fuel oil was the cheapest way to heat water. Can you furnish me with any figures on this? There are two people in our family.*

H. W., Michigan

▶**Answer:** There are many factors other than cost of operation, which influence people to install automatic electric water heaters. They are clean, safe, silent, and 100% efficient. They are the only water heater that is. For a family of two you can expect to use approximately 200 KWH per month. Naturally this will vary with water use habits. However, this will give you a rough estimate for comparing with your present costs for heating water. For more accurate figures I suggest you contact the rural representative of your power supplier.

5 HP Service Questions

▶**Question:** *What is the proper size wire for a 5 HP irrigation pump motor located 400' from the meter? Are two wires enough to use or should I use three? What type of control should I use? Would this motor affect the house appliances, such as range and lights? How many kilowatt hours will it use per hour of operation? Will a single phase motor use more kilowatt hours than a three phase motor?*

L. B. H., Oregon

▶**Answer:** Use three #6 wires. A 5 HP motor starting switch should be used at the pump site. The motor should not affect any of your household appliances. It is possible that you will notice a slight dip in the lights when the motor starts but this would be momentary and of no consequence. A 5 HP motor will use approximately 5 KWH for each hour of operation. A single phase motor will not use any more current than a three phase motor.

Water Heater Unit

▶**Question:** *We recently read that electric water heaters become less efficient with age because the heating element becomes coated with a stony deposit. Thus the electricity heats the stone instead of the water. Could you explain to us why the heat stops in the stone and does not go on into the water?*

F. L. B., Illinois

▶**Answer:** It is true that the heating element of water heaters will collect a deposit over a period of time. It is also true that some claims are made that this slows up the water heating process. I do not believe there is any actual justification for such a statement. One kilowatt hour of electricity will provide 3,412 heat units. Where the element is in complete contact with the liquid to be heated there is no opportunity for the heat to dissipate itself except through the water. Under laboratory tests it is possible that the encrusted unit would take a trifle longer to get to maximum temperature because of its increased mass. But, by the same token, it would take it that much longer to cool off. The difference should be infinitesimal and one kilowatt hour should produce the same amount of hot water with either an old or a new unit.

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FUN FOR ALL—the whole family can take part in this contest. CASH PRIZES will be awarded for the best suggestions for a last line to complete the verse at the bottom of this page.

What Would YOU Say?

Rhyme Contest

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Seven cash prizes will be awarded for the best last line to complete the verse in the coupon below. Your suggestion should rhyme with the second line.

The first prize will be $25 cash; the second prize $10. In addition, five consolation prizes of $3 each will be awarded for the best last line furnished.

In case of a tie, each winning contestant will receive the full cash prize to which he or she is entitled.

All members of the farm family to whom this magazine was sent may enter but each contestant may submit only one line.

Question "A" must be answered.

Entries must be sent to the Contest Editor, ELECTRICITY ON THE FARM Magazine, 8 So. Dearborn Street, Chicago 3, Ill., before July 20.

The decision of the judges is final and all entries become the property of ELECTRICITY ON THE FARM Magazine.

Winning names and entries will be announced in the November issue.

Send your entry on the coupon or make out a similar form on a plain sheet of paper or government postcard.

Sleep comes hard when nights get hot,
And shorter grows the temper
Let a fan's breeze cool and soft

? ? ? ? ? ?

My suggestion for a fourth line to the above verse is:

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Hardware Store ☐	Farm Equipment ☐	Power Company ☐
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We let a hotbed take the sting

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R. 1, Accord, New York

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Mrs. David Pickett
R. 1, Marvel, Alabama

"No failures whatsoever."

Orme Teske
R. 3, Kewaunee, Wisc.

"Of the wind blowing over the heather"

Mrs. Marshall Cutser
Star Route, Kentwood, La.

"From frost's fiercest endeavor."

Mrs. J. Daniel Porter
75 Prospect Street
Lebanon, New Hampshire

"Saves pep, guess work and leather."

Mrs. Alan Hasselquist
RFD 1, Malvern, Iowa

Honorable Mention

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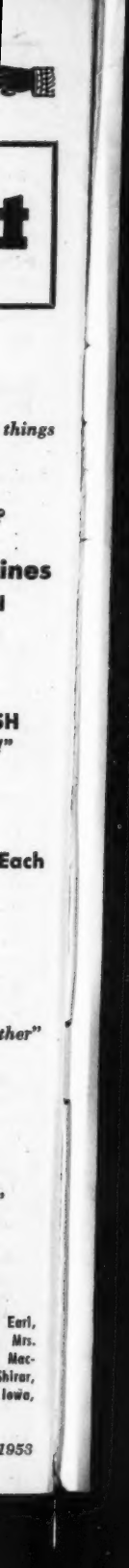

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REDDY KILOWATT'S PAGE
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